

Date: Monday, 2/4/2008 11:23:48 AM  
 User: Kim Johnston

## Process Sheet

Customer : CU-DAR001 Dart Helicopters Services Drawing Name : BRACKET  
 Job Number : 37158  
 Estimate Number : 10809  
 P.O. Number :  
 This Issue : 2/4/2008 S.O. No. :  
 Prsht Rev. : NC Part Number : D3177043  
 First Issue : 11 Type : MACHINED PARTS Drawing Number : D3177 REV B2  
 Previous Run : 31120 Drawing Revision : B2  
 Material :  
 Due Date : 2/18/2008 Qty: 3 Um: Each  
 Written By :  
 Checked & Approved By :  
 Comment : Est Rev: B 03.01.27 Added Step 12 KJ/RF

## Additional Product

Job Number:



Seq. #: Machine Or Operation: Description :

1.0 M6061T6B1000X12000 6061-T6 Bar 1.0" x 12.0"



Comment: Qty.: 4.1562 f(s)/Unit Total: 12.4686 f(s)  
 6061-T6 Bar 1.0" x 12.0"  
 Material: 6061-T6 (QQ-A-200/8) or (QQ-A-250/11) 1.00" thick  
 (M6061T6B1.000x12.000 or M6061T6S1.000)  
 Batch M106701

SA 08/02/14

2.0 BAND SAW BAND SAW



Comment: BAND SAW  
 Cut blank: 47.40" x (12.000" +0.100/-0.000)

SA 08/02/14

3.0 HAAS1 HAAS CNC VERTICAL MACHINING #1



Comment: HAAS CNC VERTICAL MACHINING #1  
 Machine part as per Folio FA291 and Dwg D3177.  
 Deburr

JMK 08/02/16

PHB

4.0 QC2 INSPECT PARTS AS THEY COME OFF MACHINE



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

JMK 08/02/16

5.0 QC8 SECOND CHECK



Comment: SECOND CHECK

JF 08/02/19

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: D3177043 PAR #: N/A Fault Category: Prod / Machined Part NCR: Yes No DQA: D Date: 08/02/02  
 QA: N/C Closed: JS Date: 08/02/22

NCR: <u>37158</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
08.02.16	3	THICKNESS ALONG BOTTOM EDGE IS -0.050" (0.150 INSTEAD OF 0.200"). BOTTOM EDGE IS ROUGH MAT'L (NOT MACHINED)	<u>CP</u> 08.02.16 PC QSI 042	SCRAP PART. CALCS SHOW NEGATIVE MARGIN OF SAFETY IN BENDING	<u>JS</u> 08.02.19 QSI 042	<u>JS</u> 08.02.19 QSI 042	<u>CP</u> 08.02.16 PC QSI 042	<u>JS</u> 08/02/19
08/02/16	3.0	one part has the counter Bore at a thickness of 0.959" (0.011" under tol. RC the machining system of making the part	<u>VE</u> 08.02.19	Acceptable. Large margin of safety.	<u>JS</u> 08/02/16	<u>JS</u> 08/02/19	<u>VE</u> 08.02.19	<u>JS</u> 08/02/19

NOTE: Date & initial all entries

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Drawing Name: BRACKET

Job Number: 37158

Part Number: D3177043

Job Number:



Seq. #:

Machine Or Operation:

Description :

6.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



(5)

Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

BR 08-02-19

7.0

D31775

Spacer



Comment: Qty.: 4.0000 Each(s)/Unit Total : 12.0000 Each(s)

Spacer

Pick:

Qty Part Number Description Batch

4 D3177-5 Spacer

B20295

FF 08-02-19

(5)

8.0

SMALL FAB 1

SMALL & MEDIUM FAB RESOURCE 1



Comment: SMALL & MEDIUM FAB RESOURCE 1

Press D3177-5 Spacers as shown on Dwg D3177

FF 08-02-19

(5)

9.0

POWDER COATING

POWDER COATING



M107005



(5X)

Comment: POWDER COATING

Powder Coat White Gloss (Ref: 4.3.5.1) as per QSI 005 4.3

M-1

08/02/19

10.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

FF 08-02-19

(5)

11.0

D26906

Lanyard



Comment: Qty.: 1.0000 Each(s)/Unit Total : 3.0000 Each(s)

5.000

Lanyard

Pick:

Qty Part Number Description Batch

1 D2690-6 Lanyard

B35601 m-2008/2/20

~~B35225~~

FF 08-02-19

(5)

12.0

AN960JD10

Washer



Comment: Qty.: 3.0000 Each(s)/Unit Total : 9.0000 Each(s)

15.000

Washer

Pick:

Qty Part Number Description Batch

3 AN960JD10 Washer

M106167

FF 08-02-19

(5)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

Date: Monday, 2/4/2008 11:23:48 AM  
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Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BRACKET

Job Number: 37158

Part Number: D3177043

Job Number:



Seq. #:

Machine Or Operation:

Description :

13.0

BLRS010

Pip Pin



Comment: Qty.: 1.0000 Each(s)/Unit Total : ~~3.0000~~ Each(s) 5.000

Pip Pin

Pick:

Qty Part Number Description Batch  
1 BLRS-010 Pip Pin 1107136

FF 08-02-19

5

14.0

MS21042L3

Nut



Comment: Qty.: 1.0000 Each(s)/Unit Total : ~~3.0000~~ Each(s) 5.000

Nut

Pick:

Qty Part Number Description Batch  
1 MS21042L3 Nut (or -3) 1106242

FF 08-02-19

5

15.0

MS27039111

Screw



Comment: Qty.: 1.0000 Each(s)/Unit Total : ~~3.0000~~ Each(s) 5.000

Screw

Pick:

Qty Part Number Description Batch  
1 MS27039-1-11 Screw 119662

FF 08-02-19

5

16.0

SMALL FAB 1

SMALL & MEDIUM FAB RESOURCE 1



Comment: SMALL & MEDIUM FAB RESOURCE 1

Assemble as per Dwg D3177

FF 08-02-19

5

17.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

5 08/02/19 (45)

18.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: 202

2x 041

3x 043

8/2/20 50 (5x)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

Date: Monday, 2/4/2008 11:23:48 AM

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Drawing Name: BRACKET

Job Number: 37158

Part Number: D3177043

Job Number:



Seq. #:

Machine Or Operation:

Description :

19.0

QC21

FINAL INSPECTION/W/O RELEASE



(3)

Comment: FINAL INSPECTION/W/O RELEASE

2008/2/20

Job Completion



D 3177043

2008/2/20 (3)

STOCK ADJ. D 3177041

(2) W

W

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



D3065-5DART AEROSPACE LTD		Work Order:	37158
Description: Bracket		Part Number:	D3177-1
Inspection Dwg: D3177 Rev: B2		Page 1 of 1	

### FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
0.970	+0.010/-0.000	0.978	—			
R0.125	+/-0.010	R.125	—			
0.700	+0.010/-0.000	0.708	—			
0.188	+0.010/-0.000	0.193	—			
0.300	+/-0.010	0.291	—			
10.776	+/-0.005	10.776	—			
R0.625	+/-0.010	R0.627	—			
Ø0.261	+0.005/-0.000	Ø0.265	—			
0.200	+/-0.010	0.198	—			
0.970	+0.010/-0.000	0.974	—			
Ø0.203	+/-0.005	Ø0.205	—			
Ø0.625	+0.001/-0.000	Ø.626	—			
3.733	+0.000/-0.005	3.733	—			
0.970	+0.010/-0.000	0.978	—			
0.700	+0.010/-0.000	0.708	—			

Measured by: <i>[Signature]</i>	Audited by: <i>[Signature]</i>	Prototype Approval:	N/A
Date: 08/02/16	Date: 08.02.16	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	04.02.25	New Issue P/O D3177-041/-043	KJ/RF <i>[Signature]</i>	<i>[Signature]</i>

D3065-5DART AEROSPACE LTD		Work Order:	37158
Description: Bracket		Part Number:	D3177-3
Inspection Dwg: D3177 Rev: B2		Page 1 of 1	

### FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

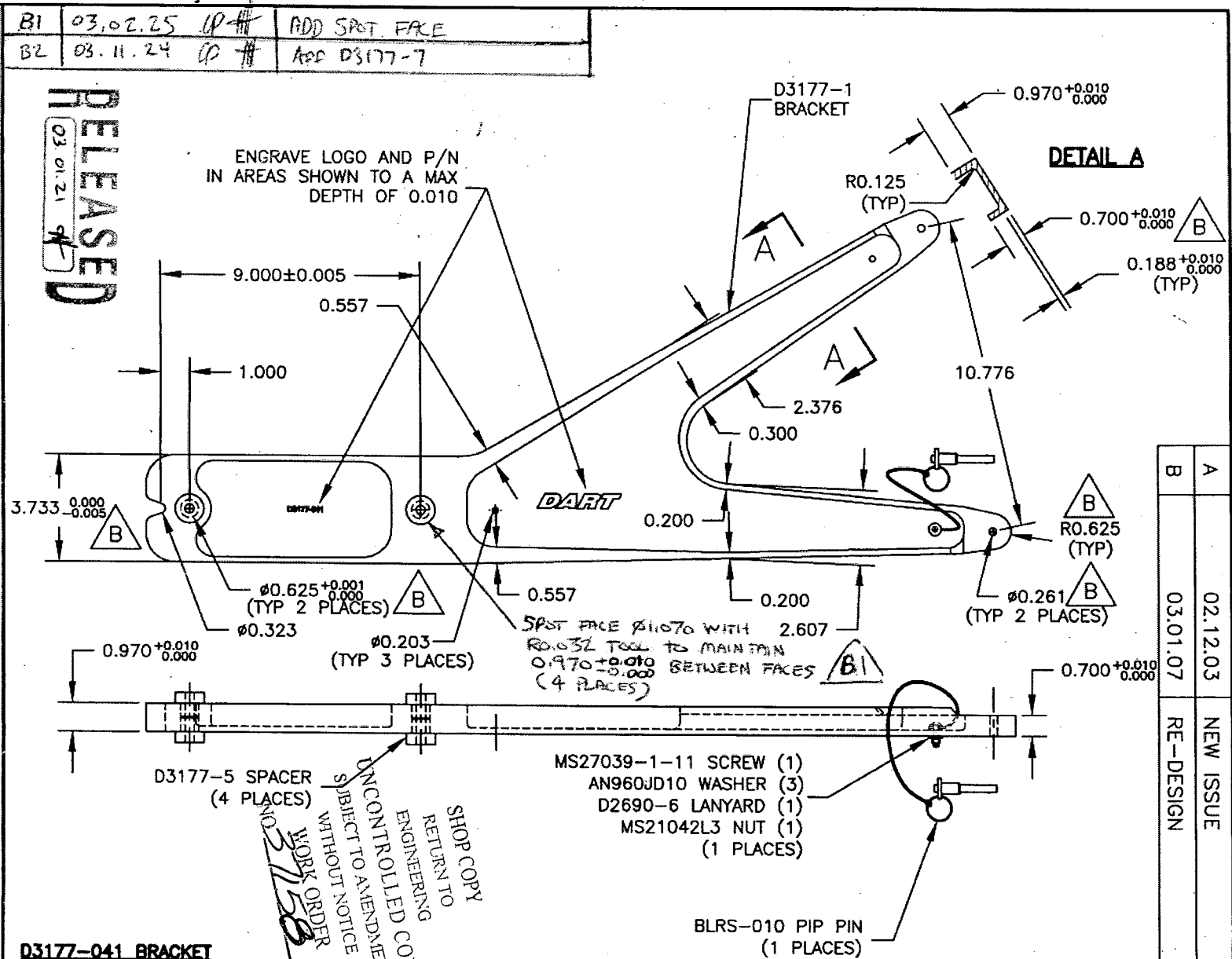
Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
0.970	+0.010/-0.000	0.980	✓			
R0.125	+/-0.010	R0.125	✓			
0.700	+0.010/-0.000	0.700	✓			
0.188	+0.010/-0.000	0.188	✓			
10.776	+/-0.005	10.776	✓			
R0.625	+/-0.010	R.625	✓			
Ø0.261	+0.005/-0.000	Ø0.265	✓			
0.200	+/-0.010	0.199	✓			
Ø0.203	+0.005/-0.000	Ø0.205	✓			
Ø0.625	+0.001/-0.000	Ø.626	✓			
3.733	+0.000/-0.005	3.733	✓			
0.575	+/-0.010	0.570	✓			
0.700	+0.010/-0.000	0.700	✓			
0.970	+0.010/-0.000	0.980	✓			

Measured by: <i>mk</i>	Audited by: <i>FE</i>	Prototype Approval:	N/A
Date: 08/02/16	Date: 08.02.16	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	04.02.25	New Issue P/O D3177-041/-043	KJ/RF <i>[Signature]</i>	<i>[Signature]</i>

QACOPY ISSUED

DESIGN	DRAWN BY		DART AEROSPACE LTD HAMKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO.	REV. B	
DATE		D31777	SHEET 1 OF 3	
03.01.07		TITLE	SCALE	
		BRACKET	1:5	
A	02.12.03	NEW ISSUE		
B	03.01.07	RE-DESIGN		



**D3177-041 BRACKET**

- 1) MACHINE D3177-1 PER DART DWG "D3177-1.SLDPRT"  
MATERIAL: 6061-T6 ALUMINUM BAR (QQ-A-250/11 OR QQ-A-200/8)  
(REF DART SPEC. M6061T6S OR M6061T6B)
- 2) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 3) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 (PRIOR TO ASSEMBLY)  
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3 (AFTER ASSEMBLY)
- 4) TOLERANCES ARE PER QSI 018 UNLESS OTHERWISE NOTED
- 5) ALL DIMENSIONS ARE IN INCHES

SPACER  
(PLACES)  
NO. 37150  
WORK ORDER  
WITHOUT NOTICE  
UNCONTROLLED CO  
ENGINEERING  
RETURN TO  
SHOP COPY

03-01-21 *gt*

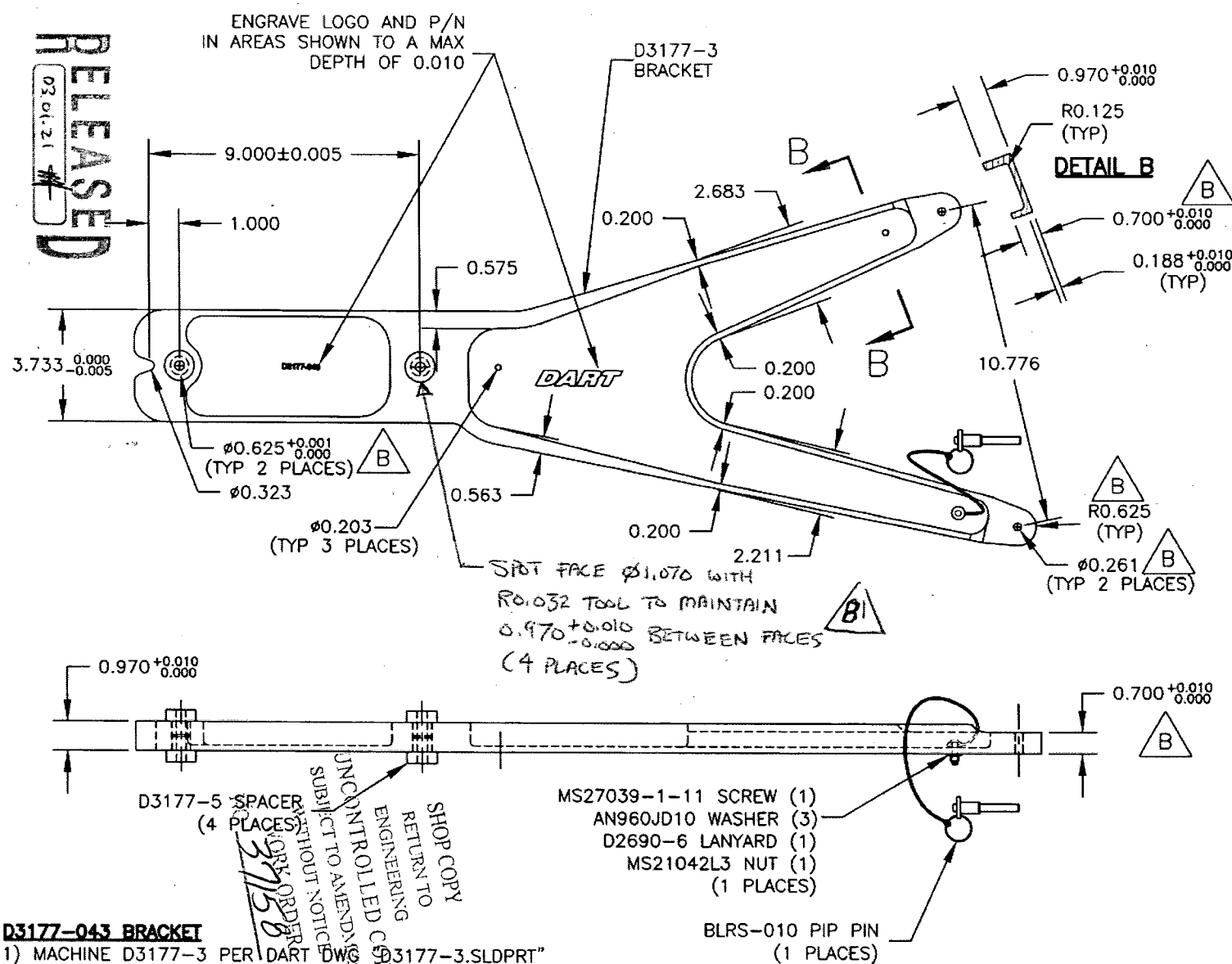
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**DART**



DESIGN	DRAWN BY	DART AEROSPACE LTD
CHECKED	APPROVED	HAWKESBURY, ONTARIO, CANADA
DATE	DRAWING NO.	REV. B
03.01.07	D3177	SHEET 2 OF 3
	TITLE	SCALE
	BRACKET	1:5



**D3177-043 BRACKET**

- 1) MACHINE D3177-3 PER DART DWG D3177-3.SLDPRJT"  
MATERIAL: 6061-T6 ALUMINUM BAR (QQ-A-250/11 OR QQ-A-200/8)  
(REF DART SPEC. M6061T6S OR M6061T6B)
- 2) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 3) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 (PRIOR TO ASSEMBLY)  
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3 (AFTER ASSEMBLY)
- 4) TOLERANCES ARE PER QSI 018 UNLESS OTHERWISE NOTED
- 5) ALL DIMENSIONS ARE IN INCHES

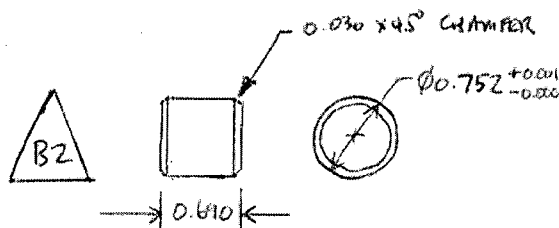
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03.01.21

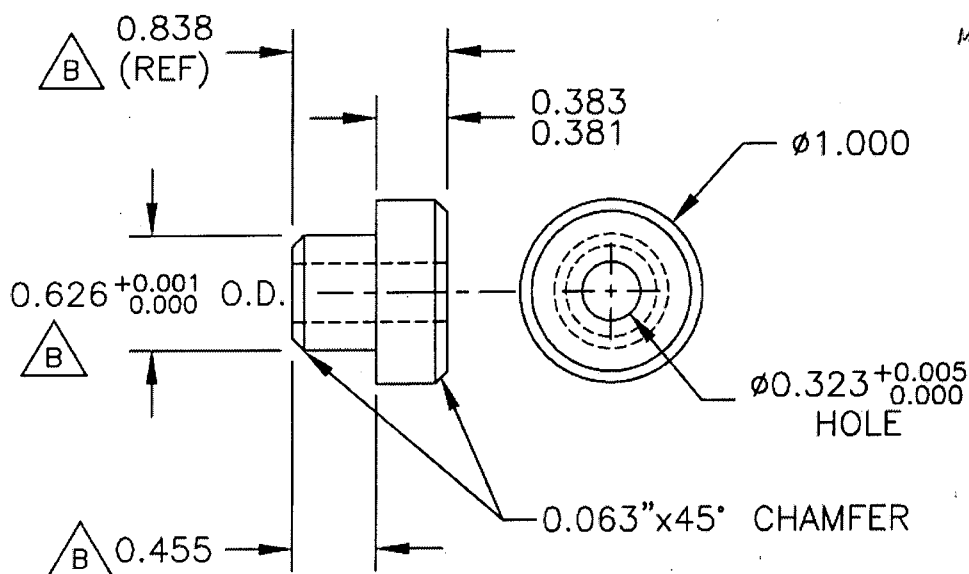


DESIGN <i>CP</i>	DRAWN BY <i>CP</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D3177	REV. B SHEET 3 OF 3
DATE 03.01.07		TITLE BRACKET	SCALE 1:1



D3177-7 PWG

MATERIAL: AISI 303 STAINLESS STEEL  
(M303 R1.000)



### D3177-5

- 1) MATERIAL: 6061-T6 ALUMINUM BAR Ø1.000  
(QQ-A-200/8 OR QQ-A-225/8)  
(REF DART SPEC. M6061T6R1.000)
- 2) BREAK ALL SHARP EDGES 0.005 TO 0.010
- 3) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) ALL DIMENSIONS ARE IN INCHES

SHOP COPY  
RETURN TO  
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UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 37158

RELEASED  
03 01-21

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